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DEFOLIATION OF SITKA SPRUCE BY THE GREEN SPRUCE APHIS.

During recent years there has been a serious trouble affecting the Sitka spruce in the tideland areas along the coast in Washington and Oregon.

In October 1918 an investigation of the trouble was conducted by Mr. J. M. Miller, Assistant Forest Entomologist of the Branch of Forest Entomology, Bureau of Entomology, U. S. Department of Agriculture. Mr. Miller found a few specimens of an aphis at Knappa, Oregon, on the affected trees, which has been identified as the green spruce aphis (Aphis abietina Walk.).

From published accounts of this insect it is quite certain that it is responsible for the brown appearance and falling of the needles of the spruce and the consequent unhealthy condition of the trees which has attracted so much attention among owners and operators in the affected region. This insect has been known in England since 1846 and has been recorded from many species of spruce common to Northern Europe and North America as grown in England. It was first recorded from the Pacific Coast as causing serious damage to Sitka spruce in Stanley Park, Vancouver, British Columbia, in 1914 to 1916. This appears to be the first and only authentic published record from North America.

From Mr. Miller's report it would seem that the spruce of the tideland flats and islands from the Columbia River south to Nehalem has been seriously affected since the spring of 1917 but that the upland spruce appears to be much less affected. So far very few trees, if any, have died from the effects of the aphis but it is evident that, if the insect continues for one or two years more in such numbers as to cause a large percentage of the needles to fall, a great many of the trees will die.

There is encouragement, however, in the fact that the history of this insect and its work shows that, as a rule, it does not occur in destructive numbers more than two or three years in succession owing to natural control by its insect and other enemies.

There is, of course, no practical remedy as applied to forest trees under forest conditions but on shade and ornamental trees it can be controlled by spraying with insecticides, such as kerosene emulsion, nicotine solutions, etc., if applied late in the fall and early in the spring.

The only method of preventing serious losses of timber, if it should die, would be utilization within three or four years to avoid the deterioration which would result from wood-boring insects and decay. Naturally, the earlier the timber can be utilized after it is dead or past recovery the better, but the heartwood will remain sound for several years in case its utilization must be delayed.

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